

REMARKS

Claims 1-30 remain pending in the present application. Claims 1-3, 18 and 19 have been amended. Claims 21-30 are new. Basis for the amendments and new claims can be found throughout the specification, claims and drawings originally filed.

CLAIM OBJECTIONS

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 18 as well as withdrawn Claim 19, have been amended to overcome the objection. Withdrawal of the objection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Barber (U.S. Pat. No. 4,025,612). Claim 3 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 depended from Claim 2 which depended from Claim 1. Applicants have reviewed original Claims 2 and 3 and have amended Claim 1 to include what Applicants believe are the limitations within Claims 2 and 3 which patentably distinguish over the art of record.

Thus, Applicants believe Claim 1, as amended, patentably distinguishes over the art of record. Reconsideration of the rejection is respectfully requested.

Claims 2, 5, 6, 9 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Barber (U.S. Pat. No. 4,025,612) as applied to Claim 1 above, and

further in view of DuBose (U.S. Pat. No. 6,013,385). Claim 2 depended from Claim 1. Claim 2 has been amended to independent form to include the limitations of Claim 1. In Claim 2, it defines "pressurizing means for increasing pressure of the combustion gas flowing in the high temperature fluid passage." The pressurizing means is also defined as increasing the pressure in the high temperature fluid passage so that the pressure becomes higher than that in the low temperature passage. As a result, reforming material will not leak from the low temperature fluid passage to the high temperature fluid passage.

DuBose (U.S. Pat. No. 6,013,385) discloses a fuel cell gas management system, which, however, does not have a fuel reforming section and therefore the fluid circuit (fluid passages) is completely different from that of the present invention.

In DuBose, an enthalpy transfer means 44 (a rotationally driven enthalpy wheel 46) is provided for transferring sensible and latent heat from the cathode exhaust stream to the cathode inlet stream, as disclosed in Column 5, lines 61 to 66. A motor driven compressor 34 is also provided in DuBose's system to compress the inlet air to approximately 2 atmospheres, as disclosed in Column 5, lines 32 to 36.

According to the present invention, however, a reforming material is supplied to the rotary thermal storage at its upstream side, whereas, in DuBose, air is supplied to the rotationally driven enthalpy wheel 46 at its upstream side. Because of this difference, it is not necessary in DuBose to take into consideration any possible leakage of air polluting gas. On the other hand, if leakage occurs in the present system, namely if a leakage of unburnt gas of the reforming material occurs, it may pollute the ambient air.

Therefore, it is important for the device of the present invention to keep the pressure in the high temperature fluid passage higher than that in the low temperature fluid passage.

An upper portion of the rotationally driven enthalpy wheel 46 of DuBose corresponds to the high temperature fluid passage of the present invention, while a lower portion corresponds to the low temperature fluid passage. It is apparent in DuBose that the pressure in the lower portion of the wheel 46 (= low temperature fluid passage) is higher than that in the upper portion (= high temperature fluid passage).

As above, since the system of DuBose and the device of the present invention are quite different from each other, the structure and operation between them are totally different. DuBose teaches the rotary thermal storage, but it does not teach anything more.

Thus, Applicants believe Claim 2, as amended, patentably distinguishes over the art of record.

Claims 5, 6, 9 and 15 ultimately depend from Claim 1. As stated above, Claim 1 has been amended and is now believed to patentably distinguish over the art of record. Thus, Claims 5, 6, 9 and 15 are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

ALLOWABLE SUBJECT MATTER

Claims 3, 4, 7, 8, 11-13, 16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3 depended from Claim 2 which depended from Claim 1. Claim 3 has been amended to independent form to include the limitations of Claims 1 and 2 and is thus believed to be allowable.

Claims 4, 7, 8, 11-13, 16 and 18 all ultimately depend from Claim 1 and are thus believed to be allowable.

NEW CLAIMS

New Claims 21-30 are the same as Claims 5, 9, 11-13, 15, 16, 10, 17 and 20 respectively, but are dependent on Claim 3. Applicants believe Claims 21-27 read on the elected species.

REJOINDER

Applicants respectfully request the rejoinder of Claims 10, 14, 17, 19, 20 and 28-30.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the

Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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